

# Formula

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$$a_c = \frac{v^2}{R} = \frac{4\pi^2 R}{T^2} = 4\pi^2 R f^2 \quad (T = \frac{1}{f})$$

$$F_c = ma_c$$

$$\frac{T_1^2}{R_1^3} = \frac{T_2^2}{R_2^3}$$

$$F_g = \frac{GMm}{R^2} > g = \frac{GM}{R^2}$$
$$F_g = mg$$

$$\text{Orbit: } F_g = F_c \Rightarrow \frac{v}{T} =$$

$$\text{Escaping: } E_p = E_k \Rightarrow v_{\text{esc}} = \sqrt{\frac{2GM}{R}}$$

$$E_p = -\frac{GMm}{R}$$